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# INFORMATION DISCLOSURE STATEMENT

US PATENT APPLICATION 10/086,496 FILED 02/28/02 FIRST INVENTOR: YEOM, ET AL.  
TITLE ETCHING APPARATUS USING NEUTRAL BEAM

EXAMINER \_\_\_\_\_

ART UNIT 2812

1. ☒ Applicant submits herewith a copy of (a) attached form PTO-1449, which lists all patents, publications, applications, or other information submitted for consideration by the Office; (b) a legible copy of each document required by 37 C.F.R. §1.98(b)(2).
2. ☐ Applicant herein apprizes the Patent Office of prior art in a parent U.S. application from which this application obtains the benefit of an earlier filing date under 35 U.S.C. §120. The Serial Number of the parent application is U.S. Application \_\_\_\_\_ filed \_\_\_\_\_ and entitled \_\_\_\_\_.  
The publications cited therein are listed on attached Form PTO-1449. In accordance with 37 C.F.R. §1.98(d) copies of the listed publications are not required.
3. ☐ In accordance with 37 C.F.R. §1.98(a)(3), Applicant hereby certifies that for each reference not in English (check at least one box below):  
☐ A copy of a translation of one or more non-English document, or portion thereof, is provided herewith;  
☐ A concise explanation is provided (check at least one box below):  
☐ in the accompanying foreign or international search report; ☐ incorporated into the specification; and/or ☐ provided herewith.

## 37 C.F.R. §1.97(b)(1), (b)(2) - WITHIN 3 MONTHS OF FILING OR ENTRY IN NATIONAL STAGE

4. ☐ Since this Information Disclosure Statement is being filed within three months of the filing date of the subject application or within three months of the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in an international application, no fee or certification under 37 C.F.R. §1.97(e) is required.

## 37 C.F.R. §1.97(b)(3), (b)(4) - PRIOR TO MAILING OF FIRST OFFICE ACTION OR FIRST ACTION AFTER REQUEST FOR CONTINUED EXAMINATION

5. ☒ Since this Information Disclosure Statement is being filed before the mailing date of the first Office Action on the merits, or before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. §1.114, no fee or certification under 37 C.F.R. §1.97(e) is required.

## 37 C.F.R. §1.97(c) - AFTER FIRST ACTION, BEFORE FINAL ACTION OR ALLOWANCE

6. ☐ Since this Information Disclosure Statement is being filed outside of the period provided for in 37 C.F.R. §1.97(b), but before the mailing date of a Final Rejection or Notice of Allowance, the submission is being accompanied by (one of the following boxes must be checked):
  - a. ☐ the fee required under 37 C.F.R. §1.97(c)(2) and specified in 37 C.F.R. §1.17(p).
  - b. ☐ the statement specified in 37 C.F.R. §1.97(e) (Box 8 or 9 must be checked).

## 37 C.F.R. §1.97(d) - AFTER FINAL REJECTION OR ALLOWANCE

7. ☐ Since this Information Disclosure Statement is being filed after the period specified in 37 C.F.R. §1.97(c), but on or before payment of the issue fee and is accompanied by both the statement specified in 37 C.F.R. §1.97(e) and the fee set forth in 37 C.F.R. §1.17(p) (Box 8 or 9 must be checked.)
8. ☐ In accordance with 37 C.F.R. §1.97(e)(1) Applicant's attorney certifies that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. ☐ The foreign or international search report(s) is/are enclosed.
9. ☐ In accordance with 37 C.F.R. §1.97(e)(2) Applicant's attorney certifies that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this certification after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 1.56(c) more than three months prior to the filing of the information disclosure statement.
10. ☒ In the event the Commissioner of Patents deems that any additional fee is required under 37 C.F.R. §§ 1.16 and 1.17 in connection with this application, Applicant's attorneys authorize that such fee be charged to Deposit Account No. 06-1130.

11. Consideration of this Information Disclosure Statement is respectfully requested.

Name:	Daniel F. Drexler	Registration Number	47,535
Signature		Date	June 3, 2002


CERTIFICATE OF MAILING OR TRANSMISSION: I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner For Patents, Washington DC 20231, or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Name	Jennifer Matson	Date	June 3, 2002
Signature			



<b>INFORMATION DISCLOSURE CITATION</b> <i>(Use several sheets if necessary)</i>				Docket Number (Optional) <b>YPL-0026</b>		Application Number <b>10/086,496</b>	
				Applicant(s) <b>GEUN-YOUNG YEOM, ET AL.</b>			
				Filing Date <b>February 28, 2002</b>		Group Art Unit	

U.S. PATENT DOCUMENTS							
EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
							

FOREIGN PATENT DOCUMENTS								
REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation		
						YES	NO	

OTHER DOCUMENTS		(Including Author, Title, Date, Pertinent Pages, Etc.)
		D.B. Oaks, W.G. Lawrence and A.H. Gelb, "Selective, Anisotropic and Damage-Free SiO <sub>2</sub> Etching with a Hyperthermal Atomic Beam", Physical Sciences Inc., 20 New England Business Center, Andover, MA 01810, 7 pages
		M.J. Goeckner, T.K. Bennett, Jaeyoung Park, Z. Wang and S.A. Cohen, "Reduction of Residual Charge in Surface-Neutralization-Based Neutral Beams", 1997 2nd Int'l Symposium on Plasma Process-Induced Damage; May 13-14, pages 175-178

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

# INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)

10/086,496

Application Number

YPL-0026

Applicant(s)

GEUN-YOUNG YEOM, ET AL.

Filing Date

February 28, 2002

Group Art Unit

\*EXAMINER  
INITIAL

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

B.A. Helmer and D.B. Graves "Molecular dynamics simulations of Cl<sub>2</sub> impacts onto a chlorinated silicon surface: Energies and angles of the reflected Cl<sub>2</sub> and CL fragments", J.Vac. Sci. Technol. A 17(5), Sep/Oct 1999, pages 2759 -2770

Takashi Yunogami, Ken'etsu Yokogawa, and Tatsumi Mizutani, "Development of neutral-beam-assisted etcher", J.Vac. Sci. Technol. A 13(3), May/June 1995, pages 952 - 958

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